OGDEN ARSENAL, PRIMER LOADING BUILDING FOR 37mm SHELL LOADING
(OGDEN ARSENAL, BUILDING 2014)
(OGDEN ARSENAL, CARTRIDGE ORDNANCE DEPOT)
(OGDEN ARSENAL, BUILDING 1014)
7726 North Carolina Way
Layton Vicinity
Davis County
Utah

HAER No. UT-84-AZ

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

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HISTORIC AMERICAN ENGINEERING RECORD

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Location: 7726 North Carolina Way, Hill Air Force Base, Layton Vicinity, Davis County, Utah

Note: For shelving purposes at the Library of Congress, Layton Vicinity in Davis County was assigned as the "official" location of Hill Air Force Base. However, Building 2014 is actually in the Ogden Vicinity of Weber County.

Date of Construction: 1942

Architect: Unknown

Builder: Unknown

Present Owner: Hill Air Force Base

Present Use: Munitions

Significance: Primers for 37mm anti-tank ammunition were assembled in Building 2014, which is the only one of its kind on the Base. This building provides particularly vivid insight into the processes involved in the manufacture of munitions and contributes to an understanding of the U.S. Army build-up which occurred on the eve of and during World War II.

History: The introduction of various types of ammunition manufacture at Ogden Arsenal during World War II necessitated the construction of many new buildings which took various forms as related to their specific functions within the overall manufacture and storage processes.

Primers, one component of 37mm anti-tank ammunition, were assembled in Building 2014. Each primer contained a "blasting cap" that was placed inside a cylindrical aluminum capsule. These blasting caps were filled with Black Powder, an explosive that is sensitive to impact, friction, and sparks. The primers that were assembled in Building 2014 were transferred to other loading plants at the Arsenal, where they were placed in 37mm anti-tank ammunition.

The explosive train in WWII-era 37mm anti-tank ammunition was three-fold. Upon impact with a target, small fuzes (manufactured in the East and West Fuze Plants at Ogden Arsenal) detonated and ignited the primer, which, in turn, initiated the main explosion of the shell.

Due to the highly volatile nature of the chemicals involved, this building was designed in the "Arsenal Style," with concrete firewalls that extend through the roofline separating all rooms that housed explosives. This concrete skeleton supports exterior walls that are constructed of lightweight hollow tile blocks that were engineered to absorb and deflect the force of an explosion outward, away from the rest of the building. The broad hip-roof overhang provides a canopy for circulation between rooms that are only accessible to each other from the exterior.

Building 2014 also contains a eight structural bays that spread across a large, open, column-free interior space. After blasting caps were loaded and sealed in smaller rooms, they were transferred into this larger room for final assembly and packing. The south end of the building was utilized for storage, bathrooms, coat rooms, and an office.

General

Description: Building 2014, located in the original Primer Loading Plant Area, is a one-story, gable-roofed building with a five-foot eave overhang on all four sides. It measures 161'-6" x 50'-4" and is constructed of concrete and red tile with a corrugated asbestos roof.

The floor of the building consists of a continuous 6-inch concrete slab and 4" x 4" welded wire mesh and footer system. The roof structure, including the overhang, is composed of steel beams on light exposed steel framing. Each of the gable ends have a small, continuous hipped roof canopy. Although the side walls retain some of their original steel frame windows, the majority of the windows have been filled with concrete block.